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Demonstrating effects of clearfelling in forestry and the influence of temperature and moisture on changes in cellulose decomposition

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Poster summary

When a forest is felled, the alteration of conditions affecting decomposition are complex. Litter input is reduced, the microclimate is altered and the various effects of living roots are replaced by those of dead decomposing roots.

The cotton strip assay was used to assess the effects of felling on decomposition processes in the soil profile of felled and unfelled plots at Kershope Forest, Cumbria, during 2 years following felling.

Cellulose decomposition increased after felling, to a depth of 20 cm (the lowest depth to which strips were inserted), and the higher decomposition was associated with higher litter humidity and generally higher surface temperature on the felled plots. Hu-

midity in the litter region was recorded intermittently with a Vaisala humidity probe, and the thermal cell method (Ambrose 1980) was used to obtain an integrated measure of soil temperature during the period of strip insertion.

The decomposition rate at Kershope was lower than those recorded on similar plots in north Wales at Beddgelert and in north Devon (Torridge).

The work is part of a larger study examining other effects of clearfelling at a number of sites, and will be fully reported elsewhere.

Reference

Ambrose, W.R. 1980. Monitoring long-term temperature and humidity. *Bull. Inst. Conserv. Cult. Mater.*, **6**, 36-42.